

AMENDMENTS TO THE CLAIMS:

Please amend the claims as follows. This listing of claims will replace all prior listings.

1-10. (CANCELED)

11. (NEW) A system to enhance situational awareness in a vertical take-off and landing (VTOL) aircraft in close proximity to the ground in a degraded visual environment (DVE), comprising:

- a sensor suite that receives environmental information;
- an imaging system that receives imagery information;
- a data fusion processor in communication with said sensor suite and said imaging system;
 - which compiles said environmental information and said imagery information into a combined output; and
- a display in communication with said data fusion processor, said display generating symbology in response to said combined output which displays an aircraft current position relative to a designated landing point.

12. (NEW) The system as recited in claim 11, wherein said display includes a heads up display.

13. (NEW) The system as recited in claim 11, wherein said display includes a head down multifunctional display.

14. (NEW) The system as recited in claim 11, wherein said display includes a helmet-mounted display.

15. (NEW) The system as recited in claim 11, wherein said imaging system includes a forward looking infrared (FLIR) system, said data fusion processor overlaying FLIR imagery on said display.

16. (NEW) The system as recited in claim 11, wherein said imaging system includes a video system, said data fusion processor overlaying said video imagery on said display.
17. (NEW) The system as recited in claim 11, wherein said data fusion processor combines said environmental information and said imagery information with an obstacle avoidance system.
18. (NEW) The system as recited in claim 17, further comprising a fly by wire (FBW) system in communication with said data fusion processor, said FBW system operable to provide automated obstacle avoidance in response to said obstacle avoidance system.
19. (NEW) The system as recited in claim 17, further comprising a fly by wire (FBW) system in communication with said data fusion processor, said FBW system operable to command a stabilized flight condition in response to said combined output
20. (NEW) The system as recited in claim 11, wherein said display generates symbology in response to said combined output which relates an aircraft velocity vector relative said aircraft current position point and an acceleration ball relative said velocity vector.
21. (NEW) The system as recited in claim 20, wherein said acceleration ball is indexed relative an end of said velocity vector opposite said aircraft current position point.

22. (NEW) A display system to enhance situational awareness for a vertical take-off and landing (VTOL) aircraft in close proximity to the ground in a degraded visual environment (DVE), comprising:

an aircraft current position point;

an aircraft velocity vector which extends from said aircraft current position point to indicate a velocity and direction of the aircraft relative the aircraft current position point; and

an acceleration ball which translates relative an end of said velocity vector opposite said aircraft current position point to indicate a velocity trend of the aircraft. .

23. (NEW) The display system as recited in claim 22, wherein said acceleration ball is color coded relative a predetermined acceleration.

24. (NEW) The display system as recited in claim 22, further composing a hover point symbol which represents a predetermined landing zone, said hover point symbol positionable relative said aircraft current position point in response to maneuvering of the aircraft such that as the aircraft maneuvers to said predetermined landing zone, said aircraft current position point will overlay said hover point symbol.

25. (NEW) The display system as recited in claim 22, further composing an above ground level (AGL) altitude display and an altitude ascent/descent trend which represents the first derivative of the aircraft altitude over a predetermined time period.

26. (NEW) The display system as recited in claim 22, further composing an above ground level (AGL) altitude tape and an altitude ascent/descent trend tape adjacent said AGL altitude tape.

27. (NEW) The display system as recited in claim 26, wherein said altitude ascent/descent trend tape is color coded in response to a current aircraft altitude relative an aircraft descent rate.

28. (NEW) The display system as recited in claim 22, further composing an auto decel constraint circle which circumscribes said aircraft current position point.

29. (NEW) The display system as recited in claim 28, wherein said auto decel constraint circle represents that an automated hover hold system of a fly by wire (FBW) system is activatable when said velocity vector and said acceleration ball are within said auto decel constraint circle.

30. (NEW) A method to facilitate flying a vertical take-off and landing (VTOL) aircraft in close proximity to the ground in a degraded visual environment (DVE) comprising the steps of:
- (1) fusing environmental information from a sensor suite with imagery information from an imaging system into a combined output;
 - (2) communicating the combined output to a fly by wire (FBW) control systems to maneuver the VTOL aircraft in close proximity to the ground;
 - (3) generating symbology in response to said combined output which relates an aircraft current position relative to a designated landing point; and
 - (4) displaying the symbology.
31. (NEW) A method as recited in claim 30, wherein said step (3) further comprises fusing FLIR imagery data from an imaging system with the symbology.
32. (NEW) A method as recited in claim 30, wherein said step (3) further comprises fusing terrain avoidance data with the symbology.
33. (NEW) A method as recited in claim 32, wherein said step (2) further comprises communicating a flight command to the FBW control system in response to the combined output to avoid a terrain obstacle.
34. (NEW) A method as recited in claim 30, wherein said step (3) further comprises displaying a distance and direction between an aircraft current position relative to a designated landing point.
35. (NEW) A method as recited in claim 34, wherein said step (3) further comprises displaying an aircraft velocity vector relative the aircraft current position point and an acceleration ball relative said velocity vector, the acceleration ball movable relative an end of the velocity vector opposite the aircraft current position point to display a velocity trend.

36. (NEW) A method as recited in claim 35, wherein said step (3) further comprises:
- (a) displaying an above ground level (AGL) altitude tape and an altitude ascent/descent trend tape adjacent the AGL altitude tape; and
 - (b) coloring the altitude ascent/descent trend tape in response to a relationship between an aircraft altitude and a descent trend.
37. (NEW) A method as recited in claim 36, wherein said step (3) further comprises:
- (a) displaying an auto decel constraint circle representing an automated hover hold system in the FBW system; and
 - (b) communicating with the FBW control system to activate an automated hover hold system in response to the velocity vector and the acceleration ball being contained within the auto decel constraint circle.